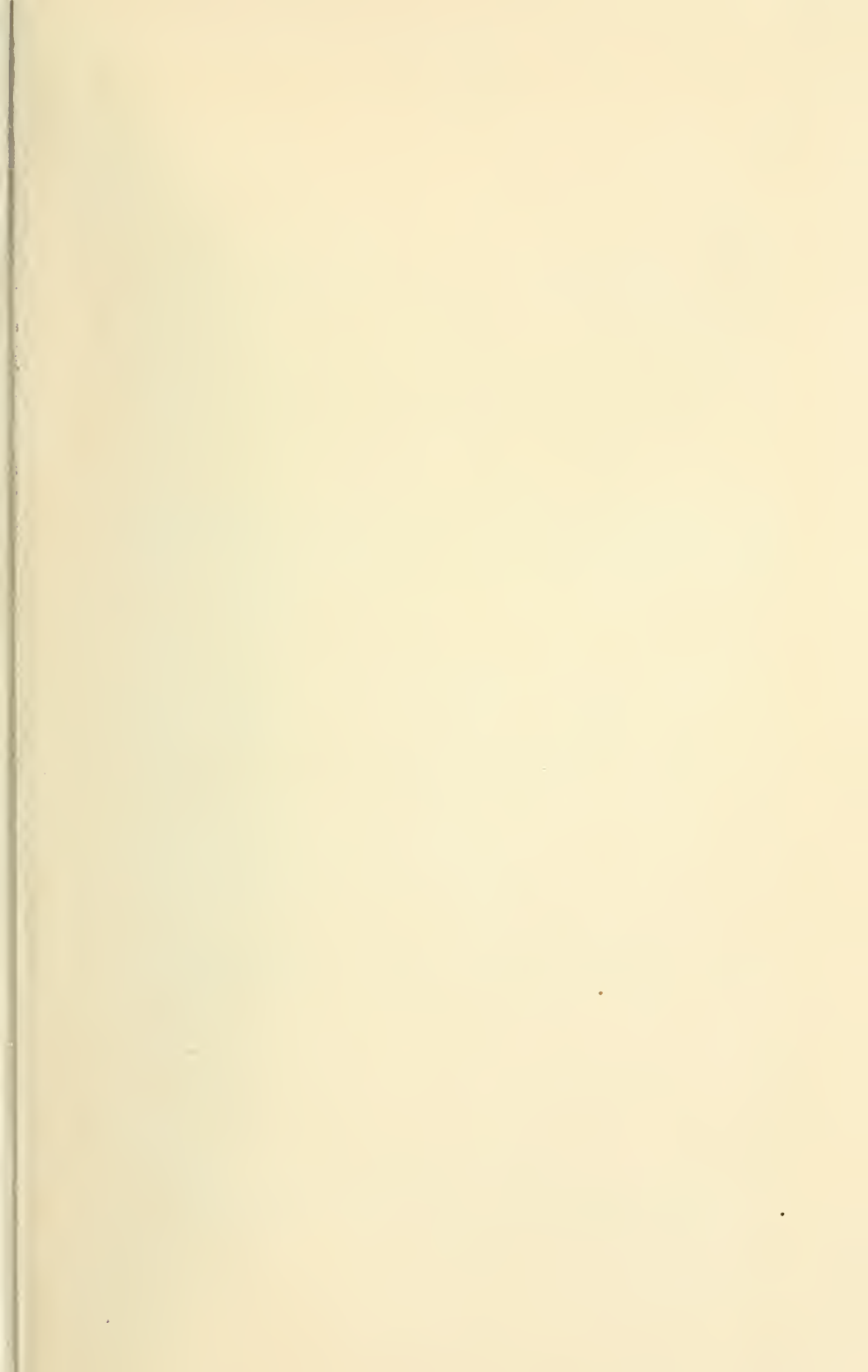


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ON THE

RELATIONS

BETWEEN

CHINESE AND THE INDO-EUROPEAN LANGUAGES.

BY

S. S. HALDEMAN,

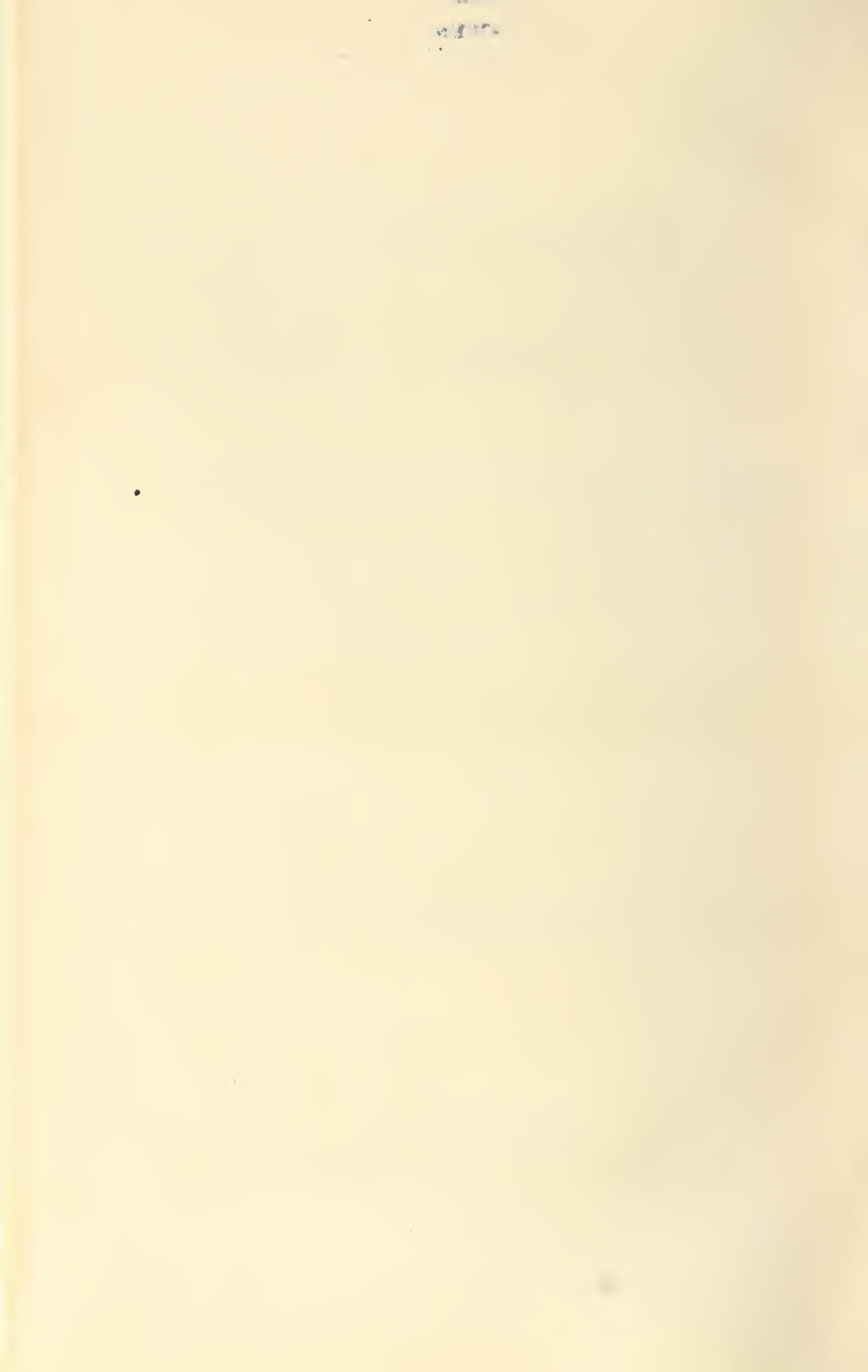
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PHILOLOGY AND ETHNOLOGY.

§ 1. THE form of Chinese is so different from that of Latin or Greek, that we might readily consider as fallacious all attempts to exhibit an identity of words between them.

§ 2. Some have endeavored to establish such an identity upon certain words of like form and meaning, which cannot be depended upon, being frequently the result of accident, like the English *bank* (of earth) and Mandingo *banko*, with the same meaning; the English *shave* when compared with the Eskimo *shavie*, a knife, and the Brazilian *ara* with "air," and *co* with "go." Similarly, the Kaffer *le, lo*, for "that," corresponds with Fr. *le*, Ital. *lo*; the Betjuana *ké* is near to the Germanic "*ik*" and Latin *EGO*; and the Bushman *ǃe* to the English *I*.

§ 3. Resemblances like the following, between Chinese, English, etc., should be admitted with extreme caution, as likely to be accidental: *gnaé, to gnaw*; *sëuk, SUGO, to suck*; *báy, to buy*; *wân, white*; *wan, crooked* (wend, wind); *tam, damp*; *tan, a red color*; *tâp, to reiterate*; *lók, to leak*; *t'hek, a house* (TECTUM); *lap, loose skin*; *t'hew, a thread* (thew); *t'hong, a thread, a line* (thong); *kap, to collect together, (keep, CAPIO)*; *kap, a cape*; *kat, to cut*; etc.

§ 4. From the paucity of Chinese words, many of them are overburdened with meanings, which gives room for accidental resemblances. Thus there are fifty different characters read "sun," and of some of these the meanings are very diverse, one meaning *believe* and *real*, another *thick* and *liberal*; but none of these meanings agrees with the English *sun* or *son*. Of twenty Chinese words, *sit* (meaning to eat, to

lose, to know, to rub, a rule, etc.), the nearest to English is that meaning a residence, often called a *seat*. This resembles the language of a child who would use essentially the same word for stick, cake, did, toad, dog, duck, scratch.

§ 5. From the monosyllabic nature of Chinese, and the necessity of placing a vowel between most consonants, the words are very different from those of Latin. Thus the word Batavia has been cut down to pa, and cap, a *ship*, stands for the Malay capal; Welsh ceubal, a *ferry-boat*; Gaelic cabaile, a *navy*; Gr. *KýuBn*, a *boat*, σ-*Kαφος*, a *skiff*; Heb. Qā'B, a *concave vessel*; Arab. CūB, a *cup*, CaVθal, a *ship*.

§ 6. We must, therefore, in comparing Latin with Chinese, reduce it to its roots, reject the prefixes con-, sub-, post-, ex-, er-, str-, etc., before consonants, and reduce them to a single consonant before vowels, and replace the useful and enlivening *r*, with *l* or *s*. Under this dissection, ICTUS, a blow; PRECOR, I pray; ROGO, I ask; and STRIX, (Persian, tshōkak) an owl, might become respectively ic, lee, sec, tec; which, from the want of the Latin inflecting material, might each have the power of from ten to fifty words, as distinct as RINGOR, I gape; SECO, I cut; and PLICO, I fold. But as STRIX, to be pronounceable, must become something like satalicasa, its Chinese form might be *sa*, as Batavia is *pa*.

§ 7. Similar imitative words may occur in languages the most distinct, without indicating linguistic affinity; as in the names of animals which imitate their cry, like the Chinese beāou, a cat, the voice of which is called miau by the Germans, *m* being a nasal *b*. But an identity of imitative words is not common between languages of different stocks, because they are submitted to the local laws of speech. In English, one who hesitates what to say, is said to *hem and haw*, although he does not use one of the sounds imitated in this translation into speech; whilst the French imitative word *siffler* is different from the English *whistle*, *hiss*, and *whiz*, although the root *sif-* is a metathesis and permutation of *whiz*, *fiz*. The English imitatives *roar*, *rush*, however natural they appear, need not be looked for in Chinese; nor will Cherokee (in which *p*, *b*, *f*, *v*, are wanting) furnish phonetic equivalents to pop, bob, bubble (πομπός), and their cognates in viv-id, vi-olent, vi-gor, Bī-oz, Bī-a, be, VI-R, VI-REO, VI-S, etc.

§ 8. But whilst imitatives must be compared with caution, if we find that an imitative basis has been not only adopted, but modified (as

far as the genius of different languages would permit) in the same manner, with the same prefixes, having the same power, we will have gone far to prove a common origin in the languages where such a uniformity occurs, — especially between Chinese and the European languages, where the differences are so obvious.

§ 9. In the present essay, a throat exclamation will be traced into European speech, together with its ramifications and growth by means of reduplication, metathesis, and the use of prefixes; to be followed by their Chinese equivalents. Throat sounds are used in various languages, to form words for cough, throat, speech, wailing, cricket, gurgle, emotion, rigid, narrow, action, work, break, noise, pound, fragment, breach, crack, point, thorn, spear, axe, molest, strike, tear, throw, shoot, ray, light, torch, fire, blow, go, extend, etc.

IRISH.

§ 10. Och, *oh, alas*; cohù, *sorrow*; ochan, *a deep sigh*; t-achta, *choking*; g-üch, *a loud voice*; r-üch, *a running, a rushing*; sruch, *a flowing of waters, a stream*; scriach, *a screech*.

WELSH.

§ 11. O, *alas, out of, what proceeds*; oi, *well! to proceed*; oc, *from, out of*; og, *what is full of motion or life, youth, a harrow*; (Latin OCCO, to harrow). The force of the Irish prefix *r-*, appears in Welsh as follows:—

§ 12. rhu, *a loud utterance*.

rhw, *what breaks or grows out*.

rhuo, *to roar, to talk*.

rhueinell, *a clarion*.

rhe, *swift motion*.

rha, *what forces*.

§ 13. ' nich, *what breaks out, a sigh*.

ig, *a hiccup, a sob*.

och, *alas*; ich, *a squeal*.

ochan, *a groan*; igio, *to sigh*.

achan, *a hymn*.

ag, *an opening, a cleft*.

§ 14. By combining rhu with uch, etc., and using prefixes (as *c-*, *ys-*, *gw-*) to the compounds, we get the two following series:—

rh-ach, *what is forced out*.

rhoch, *a grunt, groan*.

rhinc, *a creak, gnash*.

rhing, *a creak*.

rhunc, *a snort, a rattle*.

rhych, *a trench*.

rhic, rhig, *a notch, groove*.

c-r-ech, *a scream*.

greg, *a cackle*.

grig, *a low rustle*.

gryg, *harshness, roughness*.

grwng, *a rumbling noise*.

ys-g-rech, *a squeak*.

ysgrechog, *a jay*.

§ 15. The reduplication of *ig*, *ich*, (and the use of prefixes,) gives (*c* being *k*, as in Latin),

<i>ceg</i> , the mouth, throat.	<i>cegn</i> , to glut.	<i>gwag</i> , a vacuum.
<i>cegio</i> , to choke.	<i>cynган</i> , speech.	<i>ys-gecru</i> , to bicker.
<i>cecr</i> , a brawl.	<i>gw-ich</i> , a <i>s-qu-cuk</i> .	<i>h-uch</i> , a sow. (Pers. <i>khōk</i> , a hog.)
<i>ceeren</i> , to scold.	<i>gwica</i> , to cry wares.	<i>p-uch</i> , a sigh, a grunt.
<i>coer</i> , coaxing.	<i>gwach</i> , a hole.	<i>p-ucho</i> , to sigh, pant, grunt.

Compare Angl. *cegan*, to call. The *p*- of *p-uch* occurs in (de)*p-rive*, *p-lacid*, etc.

§ 16. The Welsh root-word *lla* (akin to *rha*, § 12,) is a noun meaning, that which *breaks out*, is light, or clear. It has various cognates, as *llac*, an expanse; *lli*, a flood; *llw*, an exclamation, oath; *llewer*, light; *lloer*, the moon; *llewen*, a focus; *llewynn*, a meteor; *llwys*, clear, pure, holy; and with a prefix, *g-lwys*, pure, holy, fair; *g-law*, brightness; *golwech*, worship.

§ 17. By combining *lla* and *uch*, we get the series, —

<i>llach</i> , a ray, a slap.	<i>llwg</i> , what is bright.
<i>llachar</i> , gleaming.	<i>llugan</i> , a glitter.
<i>lluch</i> , a throw, a glance.	<i>llugas</i> , a dawning.
<i>lluched</i> , lightning.	<i>llugorn</i> , a trumpet.
<i>llig</i> , what shoots.	<i>llygad</i> , eye-sight, eye.
<i>llng</i> , a gleam.	<i>llygas</i> , splendor.

§ 18. By combining *lla* and *uch*, commencing with the guttural, we get another Welsh series, —

<i>gal</i> , spread out, clear.	<i>colon</i> , a peak.	<i>gawl</i> , a dawn, holy.
<i>galw</i> , to call, invoke.	<i>gall</i> , energy.	<i>geli</i> , a shooting out.
<i>galara</i> , to lament.	<i>gallus</i> , powerful.	<i>gelin</i> , a spring.
<i>col</i> , cor, a point.	<i>golau</i> , light.	<i>goliw</i> , a faint tint.
<i>col-p</i> , a dart.	<i>gole</i> , splendor.	<i>clacr</i> , eglur, clear.

The *-p* in *col-p* (Swedish, *kol-p*, a dart) is present in the English *gulp*, *yelp*, *scalp*. The following are Gaelic : —

<i>gal</i> , weeping.	<i>geal</i> , fair, bright.	<i>gaol</i> , love.
<i>gul</i> , crying out.	<i>gilead</i> , whiteness.	<i>galun</i> , fire.
<i>galan</i> , noise.	<i>galla</i> , brightness, beauty.	<i>gaoil</i> , boiling, anger.

§ 19. The two preceding series (§ 17, 18,) suggest *φ-λέγ-ω*, to burn, shine, vex; *φλέγ-μα*, fire, (*f-la-me*): English, lo! look, light, call, yell, *gul-let*, clear, glory, glow: *ἀγγέλλ-ω*, to announce; *ἀγάλλ-ω*, to make splendid, to exult: Irish, *gäl*, white; *gäläch*, the moon: Latin, *LUCEO*,

to shine; LUX, *light*: Gr. *λύξος*, the sun; *λύγρος*, a lamp; *γ-λαυκ-ός*, blue, clear, the L of which appears in *λάω*, to look at; *λεύω*, to see, shine.

§ 20. The same L (§§ 16, 19,) occurs in the Gaelic *la*, *lo*, *laoi*, a day; *laom*, *f-lame*; *li*, color; *leas*, light; *leice*, *leug*, a diamond, a gem; *lia*, a flood; *lua*, an oath, water; *lo*, water. With these (and with *rhu*, § 12, *r* not being a Chinese element), we may compare the Chinese *lê*, clear, bright, happiness; *lek*, bright, clear; *lōng*, fireworks; *lo*, a voice, a sound; *loé*, to converse; *lō*, a gong; *lō*, a drumming in the ear; *laōu*, a noise; *lêw*, a flood; *lê*, to flow rapidly.

§ 21. From the continuousness of S, s-creak may have been intended for a continuous action: *uch*, *ich*, (§ 13,) being continuous, want the explosive sharpness that results from commencing with closed organs, a deficiency which *c*- (*cay*) would supply, besides simulating the closed glottis at the beginning of a *c*-ough, at the end of a *hi-c* (*cup*) during the continuance of *ch-ok-ing* or *g-ag-ing*, and the frequentative action of *c-ac-ling*, *ch-uc-ling*, and *g-ig-ling*.

§ 22. The root of *s-c-r-eak* is perceived in *h-ic-cup*, the enlivening *r* gives *r-ing*, (and the perversion *r-ough*): Latin, *R-IC-TUS*, the mouth; *RAVCUS*, hoarse, harsh; *R-OG-O*, to ask; Gr. *ῥ-έζ-ω*, to snort; *β-ρ-ύχ-ω*, to howl; *κ-ρ-ῖ-ω*, (fut. *κ-ρ-ῖ-ξω*), to *c-r-eak*; *ροίγῃ*, a creak, *κ-ρ-άκ-της*, *κραγέτης*, a crier; Latin, *C-R-OC-IO*, to croak, leading by successive prefixes, to creak, cricket, crack, scream, screech, click, cluck, clang, etc.; Gr. *λ-ρ-άφω*, to cry out; *κ-λ-αῖγῃ*; Latin, *CLANGOR*; and *gloc-io*, to cluck. Starting with the root of *ECHO*, *r-* gives *r-ixa* contention, a *t-* prefixed (*τρῖζω*, to stridulate, in the future tense) *τ-ρ-ῖ-ξω*, and an intensive *s-*, *S-T-R-IX*, an owl. This agglutination of prefixes shows a close affinity in the structure of Greek, Latin, and English words.

§ 23. GREEK.

¹ ἤχῃ, sound, clamor.

⁵ ὀξύς, sharp, ac-id.

⁹ κοκίω, to lament.

² ἤχῳ, echo.

⁶ ἄκοῤἥ, a sound, the ear.

(*laū*, *oi*, alas.)

³ εὐχῇ, a prayer, boast.

⁷ ἀκούω, to hear.

¹⁰ διζῶς, † affliction.*

⁴ ἄλχω, to throttle, torture.

⁸ ἄλχος, affliction.

¹¹ ἰ-αχ-έω, to shout.

* The initial of this word is akin to the preceding. The mark † indicates that the word is not a primitive form, ζ being probably derived from a guttural, like Sanscrit, Persian, and English *tsh*, which is rarely a primitive.

- 12 αἰ-αγμα, a sigh.
 13 ἰ-ωκ-ῆ, din of battle.
 14 ὄχ-λος, a mob.
 15 ἐγ-ὠ, I, the sp-eak-er.
 16 ἐκεῖ, there.
 17 οὐκ, οὐχ, not.
 18 ὄ-γε, this; noc, γε, ye-s.
 19 ὄ-κ-ωμαι, I bray.
 20 ὄ-κος, swelling, bulk.
 21 ὄ-κῃ, size, a hook.
 22 ἐγ-εῖρω, to arouse.
 23 ὤγε, come out! hence to
 egg, or aggr on.
 24 ἀ-γ-έλλω, to announce.
 25 ἀ-γάλλω, to make splen-
 did, to exult; αἰγλή, αἰ-
 γάλα, splendor.
 26 αἰγλή, light, the eye.
 27 φ-λέν-μα, fire, heat.
 28 ἄγῃ, respect, envy, hate.
 29 ἀγανρὸς, proud, fierce.
 *
 30 ἡ-άκ-ω, to sound like
 breaking.⁶
 31 λέγω, to speak.
 32 λακάω, to talk.
 33 λευκανία, the throat.
 34 χ-λάζ-ω, to swell, be full,
 rush, gurgle.
 35 λυαίνω, to cry ont.
 36 λῆγω, to hiss, whiz.
 37 λῆγνυς, a smoky fire,
 smoke.²⁷
 38 λ-υγ-ηχ-ῆς, clear sound-
 ing.
 39 κ-λαγῆ, clangor.
 40 λυγαίνω, to sob, hiccup.
- 41 φ-λάζ-ω, to stammer.
 42 ἔγω, to b-r-eak.
 43 οἶγνυω, to open.
 44 ἡ-ακ-έω, to rend, break,
 resound.
 45 λακτίζω, to kick.
 46 λάκτις, a pestle.
 47 λίγδος, ἰγδος, a mortar.
 48 π-ληγῆ, a blow.
 49 π-λήκ-της, a str-ik-er.
 50 λόγῃ, a spear head, the
 tip of the t-ong-ue.
 51 λολιός, destruction.
 52 λειχήν, lichen.†
 53 λάχνη, wool.†
 54 ἡ-άκος, a rag.^{101 102}
 55 τ-άγ-υρ, a minute frag-
 ment.
 56 ἡ-άχος, a lot, portion, ap-
 pearance.
 57 λόχμη, a bush, thicket.
 58 λυαῖος, shady.
 59 λυγρὸς, sad, weary.
 60 λύγη, darkness.
 61 λύγος, a shrub, an osier,
 flexible.
 62 λυγίω, to bend, tie.
 63 λοξός, oblique.
 64 τ-όξ-ον, a bow.
 65 ἄγῃ, a fracture,⁴² a
 wave.
 66 ὤζιν, an axe.
 67 ὄγμος, a furrow, track.
 68 ὄξετος, a trench.
 69 ὄχθ, food, a hollow.
 70 ὀγαρικόν, a mushroom.
 71 ὠκάχω, to molest.
- 72 τρ-υχ-όω, to harass.⁴
 73 αἰκ-ία, injury.
 74 αἰγδην, impetuousity.
 75 ἰζάλος, leaping.
 76 αἰς, αἶγα, a goat.
 77 ἄκ-αλς, the arm.
 78 αἰχ-μῆ, a spear point.
 79 μ-άχ-αιρα, a sword.
 80 ἄκῃ, a point.
 81 ἄκαν, a thistle, brier.
 82 ἄκανθα, a thorn.
 83 ἀκμή, aeme; ακ-μαῖ, pim-
 ples.
 84 ἔχις, a viper.
 85 ἐχίνος, a hedgehog.
 86 ἄχρῆς, the wild pear.
 87 στάχυς, a sp-ike of corn,
 a plant, offspring.
 88 τέκος, a child.
 89 στ-εγ-εῖς, an awl.
 90 τραχὺς, rough, harsh.
 91 τριγμὸς, a shrill cry.¹¹⁹
 92 δ-έχ-ομαι, to tak-e, com-
 prehend.
 93 μηχανή, a work.
 94 δεκτῆρ, a tak-er.
 95 δάκτυλος, a finger.
 96 λιχανός, the fore finger.
 97 λείχω, to lick.⁵⁰
 98 ὀρ-έγ-ω, to stretch forth.
 99 τ-άγ-ω, to grasp.⁹²
 100 β-ραχ-ίων, the arm.^{98 49}
 †
 101 ῥάγος, ῥάγος, a rag.
 102 τ-ρῦχ-ος, a tatter.
 103 β-ραχ-ύς, short, little, as
 if b-rok-en.

* *λία*, discord; *λα-*, *δα-*, *λε-*, are intensive, as in *λίαν*, *very*.

† From its broken appearance, — but *κ-ρέκ-ω*, is to *strike*, to *weave*; *κρόκη*, the wool; *κροκίς*, nap, a lock of wool, threads sticking out of cloth; hence *κρόκος*, *crocus*, *saffron*, from the conspicuous stigmas.

‡ The force of R in No. ¹⁰¹, etc., (see § 12) is observed in *ὀρούω*, to rush upon; *ὀρω*, to move, excite, arise; *ῥέω*, to flow; *θ-ρόος*, uproar.

104 <i>ράκτος</i> , a steep rock.	125 <i>φ-αγ-εῖν</i> , to eat.	143 <i>πάγιος</i> , stiff with cold.
105 <i>βακτήριος</i> , resounding, striking.	126 <i>φηγός</i> , the beech.	144 <i>πάγος</i> , frost, ice.
106 <i>ράχης</i> , the spine.	127 <i>τρύγη</i> , corn, pulse. ¹²⁴	145 <i>πάχος</i> , thickness.
107 <i>ρίζα</i> ,† a root.	128 <i>ρόγος</i> , a granary.	146 <i>παχύνω</i> , to render fat.
108 <i>ράχος</i> , a thorn bush.	129 <i>κρέκω</i> , to strike.	147 <i>πήχυς</i> , the upper arm.
109 <i>φ-ραγμῶν</i> , a thorn hedge.	130 <i>τ-ράγ-ος</i> , a goat.	148 <i>πυγών</i> , a cubit.
110 <i>φ-ρακτῆρ</i> , an inclosure.	131 <i>κράκτης</i> , a crier.	149 <i>πυγή</i> , the haunch.
111 <i>θ-ρίκδς</i> , a coping.	132 <i>κ-ρίζω</i> , † to c-roak.	150 <i>πυκνός</i> , I condense.
112 <i>τ-εχέω</i> , to wall, fortify.	133 <i>κ-ρίζω</i> ,† (fut. <i>κρίξω</i>) to c-reak.	151 <i>πυκνός</i> , crowded.
113 <i>τεκταίνω</i> , to construct.	134 <i>φ-ράζω</i> ,† to relate. ⁴¹	152 <i>πυγμή</i> , the fist.
114 <i>τεχνάω</i> , to make.	135 <i>φ-ρίξ</i> , the murmur and rippling of waves.	153 <i>πύκτης</i> , a b-ox-cr.
115 <i>ῥωγᾶς</i> , split.	136 <i>φρίκη</i> , a shuddering.	154 <i>πηκτίς</i> , a lyre.
116 <i>σ-άραρις</i> , a battle axe. ⁴⁶	137 <i>φριξδς</i> , bristled, rough, curly.	155 <i>μαγάδις</i> , a lyre.
117 <i>βράχω</i> , to crash, creak.	138 <i>θρίξ</i> , hair; ⁵³ note.	156 <i>μάχη</i> , fight.
118 <i>βρύχω</i> , to howl.	139 <i>φρύγω</i> , to fry, parch.	157 <i>μέγας</i> , big.
119 <i>ρόχθος</i> , a loud noise.	140 <i>φρυκτεῖν</i> , to kindle.	158 <i>μακρός</i> , long.*
120 <i>ρέκω</i> , to snort, snore. ⁹¹	141 <i>αἰξω</i> , to aug-ment.	159 <i>μικρός</i> , small.*
121 <i>ῥύχος</i> , a snout.	142 <i>πακτώω</i> , I make compact,	160 <i>πόκος</i> , a fleece.
122 <i>ῥήγμα</i> , a b-reak, c-rack.	<i>πηγός</i> , compact.	161 <i>πόγων</i> , a beard.
123 <i>ῥηκδς</i> , broken.		162 <i>πίξος</i> , the box-tree.†
124 <i>τ-ρ-ώγ-ω</i> , to chew.		163 <i>πέυκη</i> , the fir, a torch.†
		164 <i>πίσσα</i> ,† pitch, (<i>πίχα</i> ?)†
		165 <i>πικρός</i> , pungent, bitter.

§ 24. LATIN.

The following numbers and words correspond, in a general way, with those of the preceding Greek series. Such a reference admits of much variation, a word in one language having affinities with several in another. To keep this in view ⁴² *ICO*, I strike, has the number of *ἄγω*, I break, and its derivative *ICTUS*, a blow, has that of *αἰκία*, an injury. The name of a singing-bird, ¹²³ *FRINGILLA*, is placed near

* Whilst crowding on material enlarges an object, pressure and condensation diminish the size of the aggregation. Compare *MAGNUS*, large, and *MAGER*, lean.

† *Πύξος*, *BUXUS*, from its dense foliage, — “most dense” of Plini. “Buttmann makes it very probable that the radical notion of *πέυκη* is not, as usually supposed, that of bitterness, but of sharp-pointedness, the fir being so called either from its pointed shape, or from its spines.” *Liddell and Scott*. *Πεύκη*, *fir*, is in Latin *ABIES*, probably for *ABIEC*, its adjective being *ABIEGNUS*, as *SALIX*, *willow*, gives *SALIGNUS*, *made of willow*.

⁸¹ FRIGUTIO, to twitter; but the bird has a very robust bill, and is a seed eater, hence its number is that of FRANGO, to break. Here there is no real discrepancy; words like *break*, *crack*, being applied both to the sound and its accompanying phenomenon, the ear taking note of the former, and the eye of the latter.

- ¹ AH, alas, oh.
¹² EHO, ho! V-AH, oh!
¹⁸ S-IC, thus; T-UNC, then.
¹⁸ H-IC, here; H-OC, this.
¹⁸ EX (εκ, ἐξ), out of.
¹⁵ EGO, I.
¹³ AI (αι), alas; AIO, I say.
¹³ EJULO, I wail.
²⁰ ECCE, behold.¹⁶
²⁶ OCULUS, eye.
²⁵ B-ACCA, berry.
²⁰ N-IC-TO, I blink.
²⁷ N-IC-O, I beckon.
²⁷ S-P-E-C-IO, I see.
²⁷ S-AG-AX, seeing easily, acute.
⁶ ACHETA, a cricket.
⁶ CICADA, a noisy insect.
³⁰ LOCUSTA, a grasshopper.
² ECHO, echo.
³⁸ V-OX, voice.
³³ V-AG-IO, I sq-u-eak.
³³ F-AC-UNDUS, el-oq-uent.
³³ B-UC-INA, a trumpet.
³³ P-OC-ULUM, a cup.
³³ B-UCCA, a mouth, morsel.
³³ M-ICA, a crumb, bit.
³³ MAXILLA, a jaw.
³³ MUGIO, I bellow.
³³ F-AVC-ES, the gullet.
³³ V-AG-INA, a scabbard.
³³ V-ACO, to be empty.
⁶⁷ L-A-C-UNA, a ditch.
⁵¹ L-AC-IO, I call.
⁵¹ LEGO, I depute.
⁵¹ LOQVOR, I speak.
⁵¹ LUGEO, I mourn.
³¹ P-IG-EO, I grieve.
³¹ N-EGO, I say no.
³¹ D-O-CEO, I t-each.
³¹ FR-IG-UT-IO, I twitter.
³¹ F-L-AG-IT-IO, I demand.
¹²³ FRINGILLA, a finch.
¹³⁰ FRIGO, I roast.
¹¹⁵ RINGOR, I open the mouth.
¹¹⁵ STRIGO, I rest, take breath.
⁹¹ S-T-R-IX, an owl.
⁹¹ STRIDEO † (*d* for *g*) τριζω, † to stridulate.
⁹¹ STRIGILIS, a scraper.
¹¹⁹ R-IX-A, contention.
⁹¹ GR-AC-ULUS, a jackdaw.
⁹¹ ROGO, I ask, beg.
⁹¹ PROCO, I demand.
⁹¹ PRECOR, I pray.
¹¹⁵ RICTUS, the mouth.
⁹¹ RUCTUS, eructation.
⁹¹ RAVCUS, harsh.
⁹¹ RUGA, a w-rinkle.
⁹¹ RIGOR (ῥιγος), stiffness.
⁹¹ FRIGEO, I freeze.
⁹¹ FRICO, I rub.
¹²³ FRANGO, I break.
⁹¹ FRAXINUS, the ash.
⁹¹ PL-ANGO, I beat.
⁹¹ PLAGA (πληγή), a blow.
⁹¹ PLECTO, I punish.
⁹¹ PLECTO (πλέκω), I plait.
⁶² FLECTO, I bend, turn.
⁵³ FLOCCUS, a lock of wool.
⁶² LECTOR, I wrestle.
⁶² LIGO, I tie.
⁵³ LIC-ITUM, a thread.
⁴⁴ LIGO, a hoe, a rake.
⁴⁴ P-EC-TEN, a comb.
⁴⁴ PLICO, I fold.
⁴⁴ LAXUS, slack, wide.
⁴⁴ PL-ACENTA (πλακοῖς), a cake.
⁴⁴ FLACCUS (βλάξ), flaccid.
¹²⁴ FL-AG-ELLO, I whip.
¹²⁴ FR-UX, produce.
¹²⁵ N-UX, a nut.
¹²⁶ F-AG-US, the beech.
⁵ AC-EO, to be tart.
⁵ ACIES, an edge-e.
⁸⁰ ACUS, a needle.^{78 66}
⁸⁰ MUCRO, a point.
⁸⁰ MACERIA, a garden wall.
⁸ EGEO, to achi-e.
⁴² ICO, I strike.^{47 123}
⁷³ ICTUS, a blow.
⁴² J-AC-EO, I throw.
⁴² OCCO, I harrow.
¹¹⁶ S-AVC-IO, I wound, kill.
¹¹⁶ S-UG-ILLO, I strike, re-vile.
¹¹⁶ SAVCIUS, sick.
¹¹⁶ SIGNO, I mark, express.
¹¹⁶ V-EX-O, I pl-ague, affl-ic-t.
¹¹⁶ VICTIMA, a victim.
¹¹⁶ TR-UX, fierce.
¹¹⁶ L-AC-ERO, I tear.
¹¹⁶ LACERTA, a liz-ard.
¹¹⁶ S-AXUM, a rock.
¹¹⁶ SECO, I cut, wound, go.
¹¹⁶ SICA, a d-aggr-er.
¹¹⁶ SICILIS, a sickle.
¹¹⁶ N-EC-O, I slay.

- NOCENS, per-n-ic-ious.
 NOX (*νύξ*), night.
 NIGER, black.
 NUGAE, trifles.
 PECCO, I sin.
 P-EJ-OR, worse.
⁴² AGO, I move, drive.
 S-AG-ITTA, an arrow.
 T-IG-RIS, a tiger.
²⁷ IGNIS, fire.
²⁵ FL-AG-RO, I burn, glow.
 FOCUS, a hearth.
 FAX, a torch.
¹¹³ T-IG-NUM, a beam.
³⁷ L-IG-NUM, wood.
 B-AC-ULUS, a stick.
 AXIS (*ἄξων*), an axletree.
 GR-AC-ILIS, slender.
 L-ONG-US, long.
 M-AC-ER, m-eag-re.
 V-AG-OR, I wander.
 S-EQ-VOR, I follow.
⁴² FR-EQ-VENS, frequent.
 L-INQ-VO, I leave.
 F-UG-IO (*φεύγω*), I fly.
 N-IX-OR, I rest on, strive.
¹¹⁴ F-AC-IO, I m-ak-e.
 FACIES, appearance.
⁹³ PEGMA (*πήγμα*), a m-a-
 ch-ine.
 F-AEC-ULA, dregs.
 M-AC-ULA, a stain.
 F-IG-MENTUM, paint.
 F-ING-O, I make.
 F-IG-O, I fix.
 FICTUS, feigned.
 F-IG-URA, shape.
 L-OC-O, I place.
 L-EC-TUS, a bed.
 L-EG-O, I collect.
 L-UC-RUM, gain.
¹⁴¹ AUG-EO, I augment.
¹⁴¹ M-AC-TUS, augmented.
- ¹⁴¹ M-AG-IS, more.
¹⁵⁷ M-AG-NUS, b-ig.
 M-AG-ISTER, a master.
 R-EG-O, I dir-ec-t.
 P-ANG-O, I fix, agree.
 PIGNUS, a pawn.
 PACTUS, bargained.
 PL-AC-ATIO, a pacifying.
 P-AC-O, I pacify.
¹⁵¹ P-AG-US, a village.
¹⁵¹ V-IG-US, a village.
¹⁵² P-UG-NUS, the fist, a
 handful.
¹⁵³ PUGNO, I fight.
 PUNGO, I stick, sting.
πύγος, a p-ung-ar,
 (spiny lobster).
 PUGIO, a dagger.
 SP-IC-A, a spike.
 T-ANG-O, I touch.
 T-AC-EO, I am silent.
⁹⁷ L-ING-O, I lick.
⁵⁰ LINGVA, the tongue.
⁹² D-UC-O, to draw, t-ug,
 g-et.
⁹² D-IG-NUS, tak-e-worthy.
⁹² D-EC-ENS, decent.
⁹² DECUMANUS, great.
⁹² DICO (*δικάζω*), I take,
 give, proclaim, say.
⁹² DICO, I say, assign.
⁹² DIGITUS, a f-ing-er.
⁹² DEXTER, the right hand,
 m-ight.
⁹² DECEM (*δέκα*), ten.
⁹² INDEX, a sign.
⁹² INDICO, I show, declare.
⁴² DEGO, (DE, AGO,) I live.
 TR-ah-O, I draw, take.
 TR-AC-TO, I dr-ag, str-ike.
 V-EC-TO, I convey.
²⁵ LUCEO, to light, glitter.
 L-IQ-VEO, to be liquid,
 clear, plain.
- AQ-VA, water.
 M-AC-ERO, I s-oak in
 l-iq-uor.
 M-UC-IDUS, slimy.
 L-AC-RIMA, a tear.
 LACUS (*λάκος*), a lake.
 ST-AG-NUM, a pool.
 R-IG-O, I irrigate.
 S-ICC-US, dry, thirsty.
 S-ICC-O, I dry, drain,
 suck.
 SUGO, I suck.
 SUCUS, juice, sap, v-ig-or.
 SANGVIS, blood, force,
 race.
 V-IG-EO, I live, am active.
 F-EC-UNDUS, fertile.
 V-IC-TITO, I feed on.
 V-EG-ETUS, quick, fresh.
 R-EC-ENS, growing, fresh.
 RACEMUS, a cluster.
 SEGES, seed, corn, profit.
 SAGINA, food, fatness.
 P-IX, pitch.
 P-ING-VIS, fat.
 P-EG-TUS, the breast.
 P-IG-ER, slow, dull.
 P-EC-U, sheep, cattle.
 GR-EX, a flock.
⁵⁸ L-UC-VA, a wood.
⁶² NEXO, I bind, connect.
⁷² STR-ING-O (*στέγω*), I
 grasp, tie.⁶²
⁶² V-INCO, I conquer.
 T-EX-O, I weave, build.
 T-OG-A, a gown.
 T-EG-O (*στέγω*), I cover,
 st-ick away.
 S-OC-IO, I join, associate.
 MAS (for max?), a male.
 TUSSIS (for tuxis?) a
 cough.

§ 25. CHINESE.

Chinese being spoken with a peculiar intonation, the marks of accent and length used in printing it, indicate the tone, and where this is different, but the elements identical, the words are considered to be distinct. In fact it is less of an error to use T for L, than to use a wrong tone. The examples are from Medhurst's dictionary of the Hok-k'èen dialect, and the orthography English, ch, y, ng, having their power in *chip*, *young*. The examples will be those corresponding to the Welsh, Greek, and Latin, already given, commencing with those which have a reduplicated guttural, as k-k, k-ng, y-k, or its transmutation (with English ch, as in speak, speech,) ch-k.

§ 26. kek, bright; keng, very bright; gâng, bright; gông, sunrise; hông, red; yàng, to illumine; yang, the sun; cheng, brightness; hong, luminous, clear; (sëang, cloth of a light yellow color, as if from sè, cloth, and eng, bright).^{*} Jakutish, tshaghyrgā, to radiate, lighten; tshokyr, flint; tshoz, a burning coal; dzhangkii, to be clear, transparent. The mind associates a ray, a spear, and a shoot; hence we find

§ 27. kek, a spear; hong, the point of a weapon; keng, a stalk of corn; chek, a blade of grass; yang, young shoots of rice, calamity; yāng, nourishment; yáng, nausea; (seng, to be born, alive).

§ 28. go'k, a peak, the point of a sword, a crocodile; ga'k, a hill; gek, rugged like hills, lofty; gōng, high.

§ 29. yü'k; a sound, a voice, bright, clear; yúng, to leap, a bubbling fountain, bold; yea'k, to leap; heng, to walk, to travel; (ông, to walk quickly; sëang, hasty); cheng, hasty walking, afraid; hek (and lek), to be afraid; che'k (and t'ü'k), to advance; (e'k, to lead hastily); hēng, to accompany; hōng, haste; hēung, to hasten. (In German *keck* means pert, bold, nimble; Eng. quick). Jakutish, yk, to hasten.

* In like manner, it is probable that the Sanscrit root rāp'h, *to stir, to break*. Latin, RAP-IO, (Eichhoff, No. 525,) is composed of aR, *to go, to reach*, (E. No. 495,) and ab, *to go*, (E. No. 22,) or āp, *to occupy, to hold*, (E. No. 23.)

§ 30. The following examples, in continuation of the preceding, are to be read across the page. The first column contains the root, to which the prefixes s-(r-)t-, l-, are added in the second, third, and fourth columns. A few parallel forms in Greek, Latin, Welsh, Gaelic, and Hebrew are added, examples in r- being placed with its cognate s-.

§ 31. The force of the Chinese prefixes k-, s-, t-, (l-, see § 20,) is observable in kē, a pearl; to ridicule; to pray; to sell; * kē, to fear; kè, a stalk; proud; hasty; kê, happy; k a e, violence; harmony. sē, to look at; to spread out; a connecting thread; ardent; to swear; day-break; a peak; s e, an arrow; to wet; silk; spittle; the beginning; sè, power. t e, to blame, to kill; té, to revile; to oppose; tē, to extend to; to display; tê, a pond; to walk; tâ, to frisk; to be burnt.

* When definitions are separated by semicolon, they are represented by different Chinese characters of the same name; when by a comma, they define a single character.

As the Latin final *m* indicated a nasal vowel, it is printed as in STAGNUM, that it may not have the prominence of a real (and a labial) consonant letter.

The examples of Jakutish (yakutish) are from Böhrlingk, and in the absence of the proper types, his Russian orthography has been roughly turned into English. It could not have been done critically without considerable explanation, and the same remark applies to the few Hebrew words introduced.

Should the suggestion that ABIES is from ABIEX be correct, the following table may be constructed:—

A B I E G N U S ,	<i>of fir.</i>
A B I E S ,	<i>the fir.</i>
P I .. C S ,	<i>pitch.</i>
F .. A C S ,	<i>a torch.</i>
F .. O C .. U S ,	<i>a hearth.</i>
π ε ú κ .. η .. ,	<i>the pine.</i>
S-P I .. SS .. U S ,	<i>dense, etc.</i>

Here SPISUS is probably for *s-pic-sus*, from the root of *pac*, no. 142.

In the following examples, a few of the words are not placed in the column with those having the same initial—for the purpose of accommodating modifications of idea. Thus, Hungarian *szak*, § 36, stands in the first, instead of the second column.

- ✓ § 32. eng, clear, bright. ek, the brightness of fire. (Latin, ignis, fire. Gaelic, ogh, pure; eng, moon; ece, clear; uige, a jewel. Hing, eg, the stars. Jakutish, öng, color; üng, red on the cheeks.)
- eng, a fire-fly.
- § 33. eng, a flower. eng, flowery. öng, to prosper, bright.
- § 34. éng, beards of grain, an awl; a'k, a spindle. öng, a wasp. (L. ACUS, a needle, § 23⁵; ACULA, an awl. Gael. aelut, Hing-szeg, a nail. Turkish, ung; Jakut. ox, an arrow; üg, a file.)
- § 35. eng, a grave; (öyüç, a furrow⁹⁸) öng, hump-backed. (Gaelic, aighe, a hill; acla, a mound.)
- § 36. e'k, the noise of splitting. (Latin, ic-tus, a blow. Greek, aya, I break.⁴² Hungarian, ek, a wedge; szak, a fragment. Jakut, ang-y, a part; ang-ai, open; ong-oi, an aperture.)
- § 37. eng, to sing, eng, yung,* the singing of birds. eng, the sound of hallooing. ang, disorderly.
- S—
- seng, bright, to burn; sunrise, song, clear, pleasant, grand. (Welsh, rhaca, a shower. Gaelic, engas, likeness. Jakut. sax, to strike fire.)
- seng, a star.
- seng (and sey), luxuriant herbage. (Heb. rāḡān, to sprout leaves; shāḡāh, to grow.)
- sek, to stab, a sting, sok, a lance, a spear; san,* sheavers. (Heb. rāḡāq, to break; rāḡāq, to split. Lat. sag-ITTA. Gr. πῶγος¹⁰⁸ W. such, a snout. rhuch, a husk.)
- sək, the hollow of a grave, sēung, high; the point of a hill. s'ün g, a fir-tree. sēang, to ascend, exalt. (Heb. rāḡām, to heap up.)
- sek, to cut off; to split wood. (Heb. sūbhaph, to scrape. Lat. sec-o, I cut off. ποῦγας, split, 116 W. sig, a shatter, a bruise; rhevio, to harkney. Heb. rēhēh, a mill-stone.)
- seng, a flute. (Gr. φόξ-θός, a loud noise.⁹¹ Lat. nixa, contention. Jakutish, sang-a, voice, outcry.)
- T—
- teng, a lamp, t'hēung, dry and hot, t'hun, a spark. tōng, red, set, dry. (Lat. succus. W. tēg, clear, fair.)
- t'hong, the sun darkened.
- t'hok, bamboo shoots; to burst out. t'ek, a sort of weed. (W. tug, prosperity.)
- tek, an arrow point, teng, a nail, t'hek, to slaughter. (Lat. tango, I touch, at-tack.⁹² Heb. tūqāq, to strike. Jakut. tong-yi, tshook-yi, to beat, knock; dzhang, pestilence.)
- teng, a mound, teng, to ascend, ripen. tēng, the top. (Welsh, rhic, a groove; rhych, a furrow.[†])
- tēnk, to hack, a hoe, tok, to scrape, to hack. tek, any thing made shorter. (W. toc, what is abrupt; tocio, to dock; twe, a cut. Jakutish, löng, split wood.)
- teng, tin, tang,* a t-inking. tōng, an echo. tōng, the sound of a drum. t'hong, the noise of water. tóng, the noise of falling in water.
- L—
- lēng, good, fine. löng, the appearance of fire. löng, bright, clear. l'ēu'k, green. (Lat. lux, § 19. Heb. Lāḡāh, a flame, a sword-blade; Lāḡat, to burn, § 23²⁷)
- lēng, the rising sun, § 17.
- lōng, overgrown grass. l'ēu'k, high grass. (Welsh, llig, what shoots.)
- lēng, any thing pointed and angular. löng, to pierce. löng, corner of a hill. löng, thin, meagre, (Lat. lūgva, the tongue.⁵⁰ Sanscrit, nak, to pierce; naḡ, to destroy.)
- lēng, a large mound. löng, a tomb. (W. lloc, a mound, a dam.)
- lok, a sabre wound. lek, to cut, scrape; strength. lēng, to cut off. lāng, to beat, strike. (Lat. ligo, a hoe.⁴⁴ Heb. rāḡash, to strike with the foot.)
- lōng, the tinkling of gongs. löng, to strike against; the humming of birds. lēng, a small bell. l'ēung, the sound of a drum. (Jakut. lyngkyr, a clanging.)

- § 38. *ak*, a *ca-ckling*. *ek*, the noise of *laugh-ing*. (Gael. *ac*, *speech*; *oc*, a *poet*. Jakutish, *oghüi*, to *choke*.)
- § 39. *êng*, to *reply*. *yîn**, to *promise*. *yîn*, to *say*, to *declare*. *yîn*, the sound of *thunder*; (*hîô*, *echo*, 16 11.14. Jakutish, *ax*, to *count*, to *tell*.)
- § 40. *êng*, *water flowing back*. *an-g*, *overflowing*; *ak*, to *ir-ri-gate*; *ak*, to *drip*; *yûng**, a *fountain*; *yûng*, *water flowing quietly*. (Latin, *AQ-VX*, *water*. Jakut. *ygyt*, an *overflow*.)
- § 41. *ek*, a *cord*, a *series*.
- § 42. *óng*, to *go*; *eng*, to *encounter*. (Lat. *ACO*, I *move*, *drive*. Gael. *eigean*, *force*).
- sek*, a *chirping*. (Hung. *tik*, *tyúk*, a *hen*.)
- seng*, a *voice*, a *noise*. (Heb. *rûham*, to *make a noise*; *rûham*, *thunder*; *reşş*, *outcry*. Lat. *NOGO*, I *ask*. Ger. *sag-en*, to *say*. W. *rheg*, an *utterance*.)
- seng*, a *rising of water*. (Heb. *rûhât*, to *flow*. W. *soegi*, to *steep*; *swg*, a *soak*. Lat. *RIG-O*, I *irrigate*. Jakutish, *sik*, *moisture*, *deu*.)
- sûn**, a *thread*. *sûên*, a *thread*, *connecting line*. *sek*, *fine cloth*. (W. *syg*, a *chain*. Lat. *SOC-IO*, I *join*. Heb. *rûşas*, to *bind on*, or *to*.)
- sêng*, to *wound*.
- tnk*, *chênk*, the noise of *calling fowls*. *t'hék*, to *vociferate*. *t'héuk*, to *rail at*. *téuk*, to *thump*. *tok*, to *beat*.
- têng*, to *warn*. *t'héng*, to *boast*. *têng*, a *clap*. *téung*, *reiterated*; *ek*, a *stoppage in the throat*. (Lat. *DIC-O*, I *say*; *TUSSIS*, a *cough*, for *TUXIS*; W. *tâg*, a *struggle*.)
- tông*, a *pond*. *têng*, a *dam*. *ték*, the appearance of *water*. *téang*, to *inundate*, the *tide*. *têng*, *brimful*. (Latin, *STAG-NU*, a *pond*; *STAGNO*, to *inundate*. Jakutish, *toğ*, to *pour out*.)
- tek*, to *tie*. *têng*, a *cord*. *t'hóng*, a *thread*, a *line*.
- te'k*, to *oppose*. *tong*, to *run against*. *téu'k*, to *advance*. (Jakutish, *yk*, to *hasten*.)
- lek*, a *kind of flute*. *lek*, the noise of *water*.
- lêng*, *talkative*. *leng*, to *command*. *lêng*, to *insist upon*. (Gr. *λέγω*, I *speak* 9.38; *λέγος*, a *word*. Lat. *LOQ-VOR*, I *speak*. *LOCUSTA*, a *striding insect*.)
- long*, a *wave*. *lêng*, *superfluous*. *lek*, *overplus*. (Lat. *LACUS*, *LIQUIDUS*. Heb. *logh*, a *deep cavity*.)
- lok*, *joined*, a *thread*. (Lat. *LIG-O*, *SEC-TO*, I *tie*; *LIG-IVM*, a *thread*.)
- lëu'k*, to *kill*.

* The vowel *a* generally requires *n* after it, by a law which, out of the English "hang," would be likely to make *han* or *hong*. Similarly "ing," might become *gin*, and "ung" *gunj*. Among the root words of the first column are *ang*, *eng*, *ong*, but not *ung*, *ing*, *ag*, *og*, *eg*, *ok*.

† This an example of the *polarity* of words, like the English *dike*, a mound, and an excavation.

FROM THE PROCEEDINGS
OF THE
CLEVELAND MEETING
OF THE
AMERICAN ASSOCIATION FOR THE ADVANCEMENT
OF SCIENCE.

INVESTIGATION OF THE POWER OF THE GREEK Z, BY MEANS OF
PHONETIC LAWS. By PROFESSOR S. S. HALDEMAN, of Colum-
bia, Pa.

THOSE who attempt to investigate the powers of the Greek and Latin alphabetic characters with the aid of the ancient grammarians, are met by a difficulty, in some places, which at first seems insurmountable; namely, the different readings of the text, which will allow the same passage to be quoted to maintain the most opposite views. This may be attributed to the fact, that, in the course of the gradual changes to which language is subject, some of the letters would acquire new powers, or be used in a perverted sense; and so far as these powers and characters became naturally associated in the mind, would the descriptions of the ancients seem obscure when treating of a character thus perverted.

Let there be, for example, a collocation of the English consonants *zd* (as in *wisdom*, *Esdras*) in Greek and Latin, and let this double sound be represented by the single character ζ, writing *Ezras*, but pronouncing *Ezdras*. Let the same character ζ be gradually associated with the power of English *dz*, as in Italian, and to such an extent that Greek and Latin words will be naturally read like Italian ones. The later Italian scholar, in learning from the ancients that the Greek ζ was a double letter composed of *s* and *d*, would be likely to corrupt the text, under the idea of correcting it, to make the *s* follow

the *d*; and this is just the condition in which we find the history of Greek Zeta.

Important characteristics often lie in the combinations of the vocal elements, and as we cannot have a philosophical view of a language unless its exact condition be known, we must endeavor to solve a question of this kind with the collateral aid of the mechanical structure of the language, — depending upon the physical action of the vocal organs, — an aid which grammarians are not inclined to make use of.

Some moderns, including the Greeks, doubt the fact of ζ having been a double letter, although the ancient grammarians are explicit upon this point. These Greeks contend that the comparison of ζ to *s* and *d* merely meant English *z*; as if, to give a native of Somersetshire (who pronounces *s* as English *z*) an idea of the hissing sound of *s*, we were to tell him that it is composed of his perversion (English *z*) and *t*.

This argument, which deserves attention, has not been placed in its strongest light by its advocates. As *d* and *b* are aspirated in Modern Greek, *d* and *b* cannot be represented except by a new letter, or an expedient, as νδ and μβ; so, if ζ had its English sound, and had to be explained by other letters, *s* and *d* would answer the purpose very well, because, English *z* being a vocal *s*, the character of the latter would answer if a vocal letter like *d* were added to indicate this vocal quality.

Mr. E. A. Sophocles argues that ζ was not a double letter, because the Ionians used it, although they separated the other double letters, writing χσ for ξ, and φσ for ψ. But as ξ is normally κσ and not χσ, it would have been erroneous to use it for the latter dialectic variation. Let us illustrate by a modern example. In dialectic variations the German word *nichts* loses the *t*, making *nichs*, which would be equivalent to a Bæotian form, as if νχς; or, simulating a Doric form, it would be *niks*, as if νκς; and it is evident that, whilst the use of the character ξ would be of doubtful propriety in the former, it would be proper in the latter.

But the best reason for not writing the elements of ζ separately, even when κσ and πσ were thus represented, was the impossibility of doing so, from the fact that it was not composed of any two letters of the alphabet, except in the Doric and Æolic dialects, where it was

separated into σ and δ , (not δ and σ), unless when initial, where ζ probably had its normal power of English zd , and consequently was not strictly represented by sd .

In the Doric combination $\sigma\delta$, therefore, the σ may be presumed to have had its pure or hissing sound. But the initial element of normal ζ was not pure σ , but English and French z , for which there was *no separate character* in Greek and Latin, as there is not in Italian and Spanish. In Modern Greek, the δ part of ζ having been lost, the character remains with its English power, which is some evidence in favor of this power being part of its original sound.

This explains another difficulty upon which the Modern Greeks insist; namely, that if ζ had been sd , the Romans could have thus represented it, but we are told that the sound was unknown to Latin, that is, the sound of the part represented by English z . Nevertheless, in giving some idea of its double power, the ancient grammarians made the nearest approximation afforded by their alphabet.

Were ζ composed of Latin ds , it would be likely to be common as a final in Greek, where σ is the commonest final consonant, occurring detached, and in ξ and ψ . Surd consonants are more readily produced than sonant ones, and in languages where both phases are present, a surd combination may be expected with its corresponding sonant; consequently, if ζ were $\delta\sigma$, we should be able to find $\tau\sigma$, which, however, does not occur.

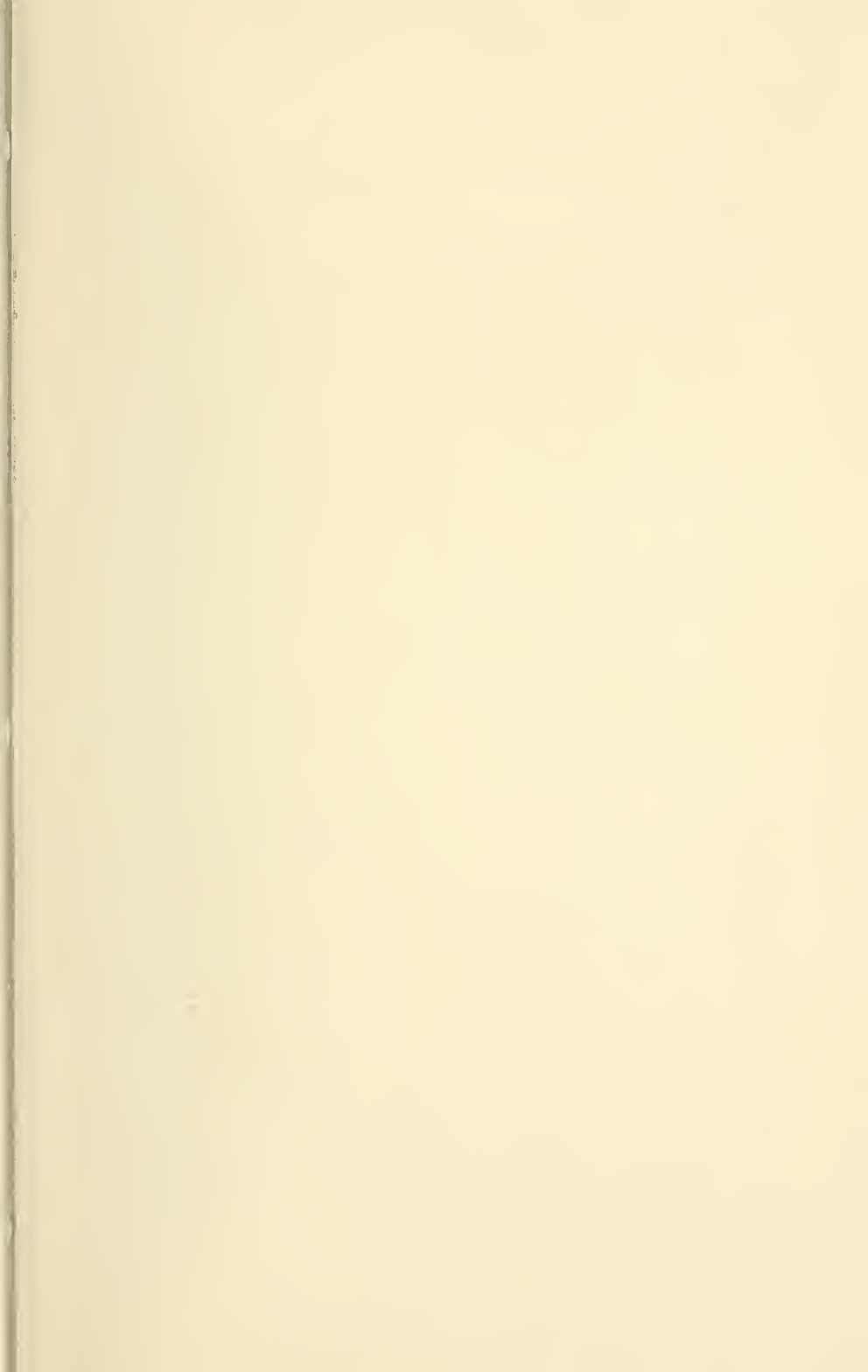
We will now reverse the case, and see what part the ζ will play in Greek, if, as English zd , we assume that it ends with δ . In certain inflections, when a δ or τ would fall before σ , tending to form the un-Greek combination ds or ts , the δ or τ was dropped, as in $\xi\pi\epsilon\sigma\omicron\nu$, not $\xi\pi\epsilon\tau\sigma\omicron\nu$; and $\phi\rho\omicron\nu\tau\acute{\iota}\sigma\omega$, not $\phi\rho\omicron\nu\tau\acute{\iota}\zeta\sigma\omega$, where δ , as the last element of ζ , would be brought before σ . In $\eta\kappa\alpha$ for $\eta\delta\kappa\alpha$ an elision of δ before κ is shown, and the same thing takes place with the final δ of ζ in $\pi\epsilon\phi\rho\acute{\omicron}\nu\tau\iota\kappa\alpha$ for $\pi\epsilon\phi\rho\acute{\omicron}\nu\tau\iota\zeta\kappa\alpha$. If δ before μ has a tendency to become σ , it will be likely to do so when it forms part of ζ ; hence we find $\eta\sigma\mu\alpha\iota$ for $\eta\delta\mu\alpha\iota$ paralleled by $\phi\rho\acute{\omicron}\nu\tau\iota\sigma\mu\alpha$ for $\phi\rho\acute{\omicron}\nu\tau\iota\zeta\mu\alpha$. In this case, if ζ were ds , there would be no need of change, as that would form the euphonious Greek combination $\sigma\mu$.

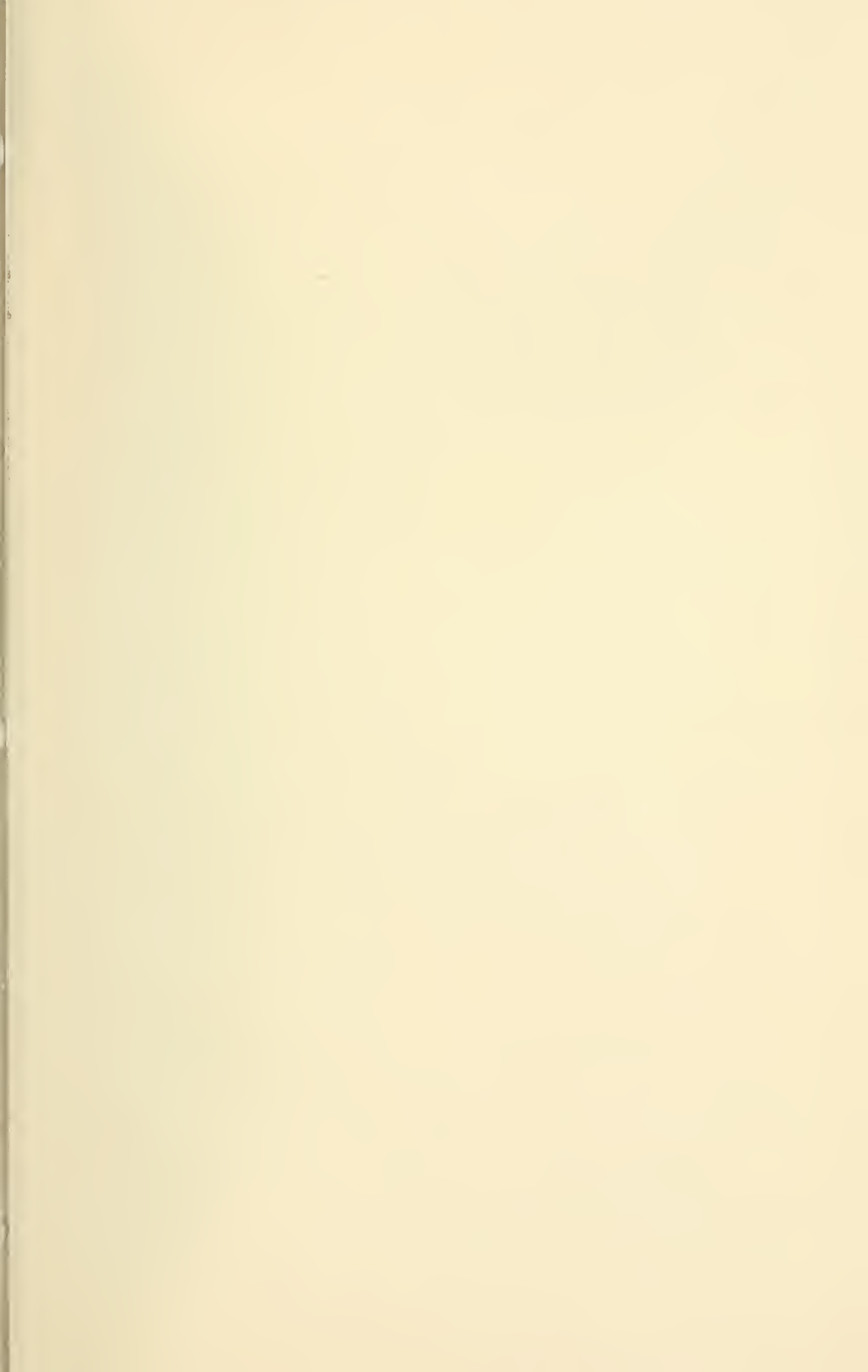
If δ is elided before σ , another dental, ν (itself a nasal d), may be expected to exhibit the same law. We need not be surprised, therefore, to find $\sigma\acute{\upsilon}\zeta\upsilon\gamma\omicron\varsigma$ for $\sigma\acute{\upsilon}\nu\zeta\upsilon\gamma\omicron\varsigma$, a change which aids in confirming

the view that ζ was not *ds*, as in that case ν would have been brought before δ, forming an euphonious Greek combination requiring no change.

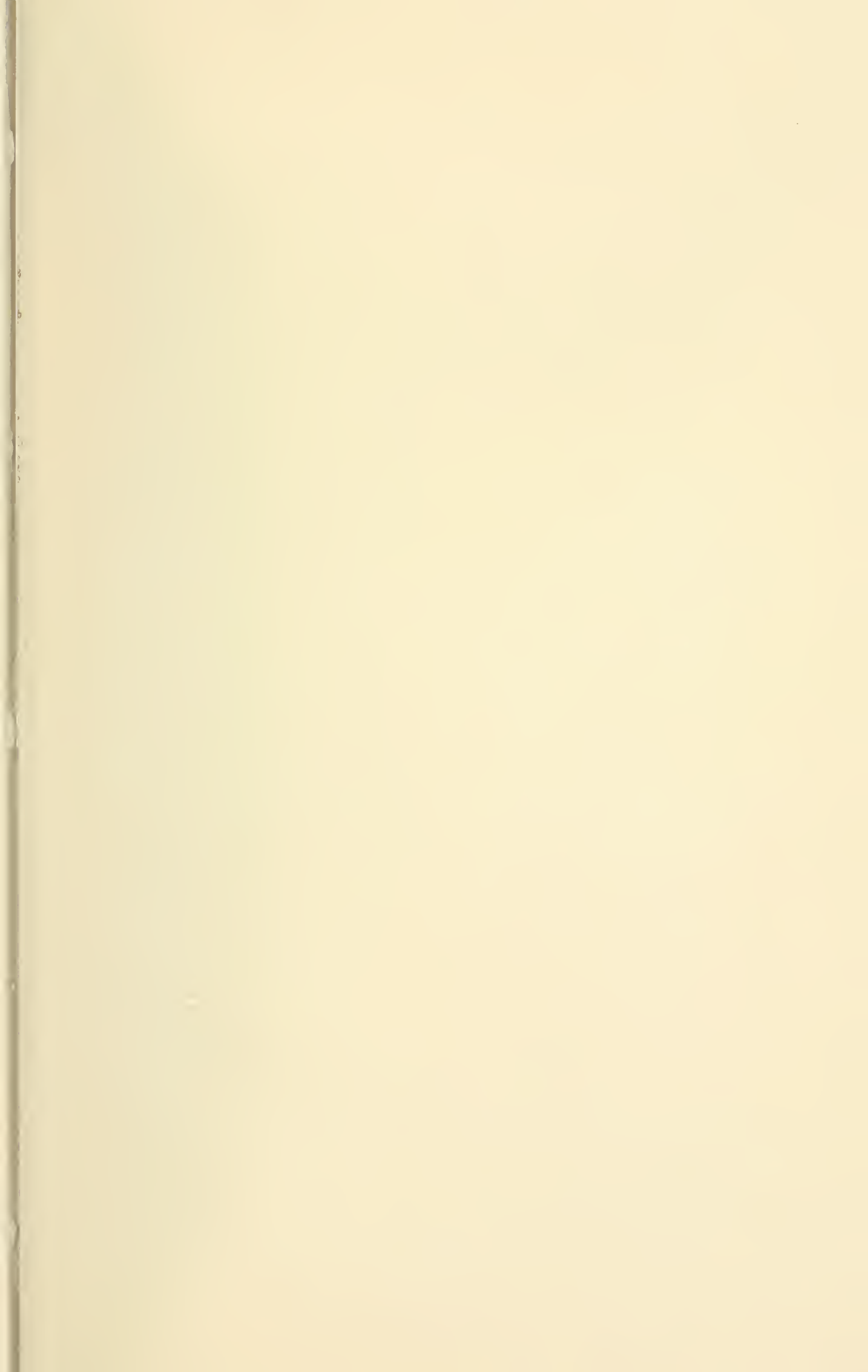
As a Greek or Roman could write no foreign word containing a sound unknown to him, he represented such sounds by the nearest approach his alphabet afforded, writing *Arphaxad*, although the original contained *k-sh*. This adaptation accounts for the Greek form Ἀζώριαι being used for two Hebrew originals, in one of which ζ is the representative of the sounds *sh-d*, and in the other of *s-d*, and we find *Esdra*s written both Ἐξπα and Ἐσδρας.

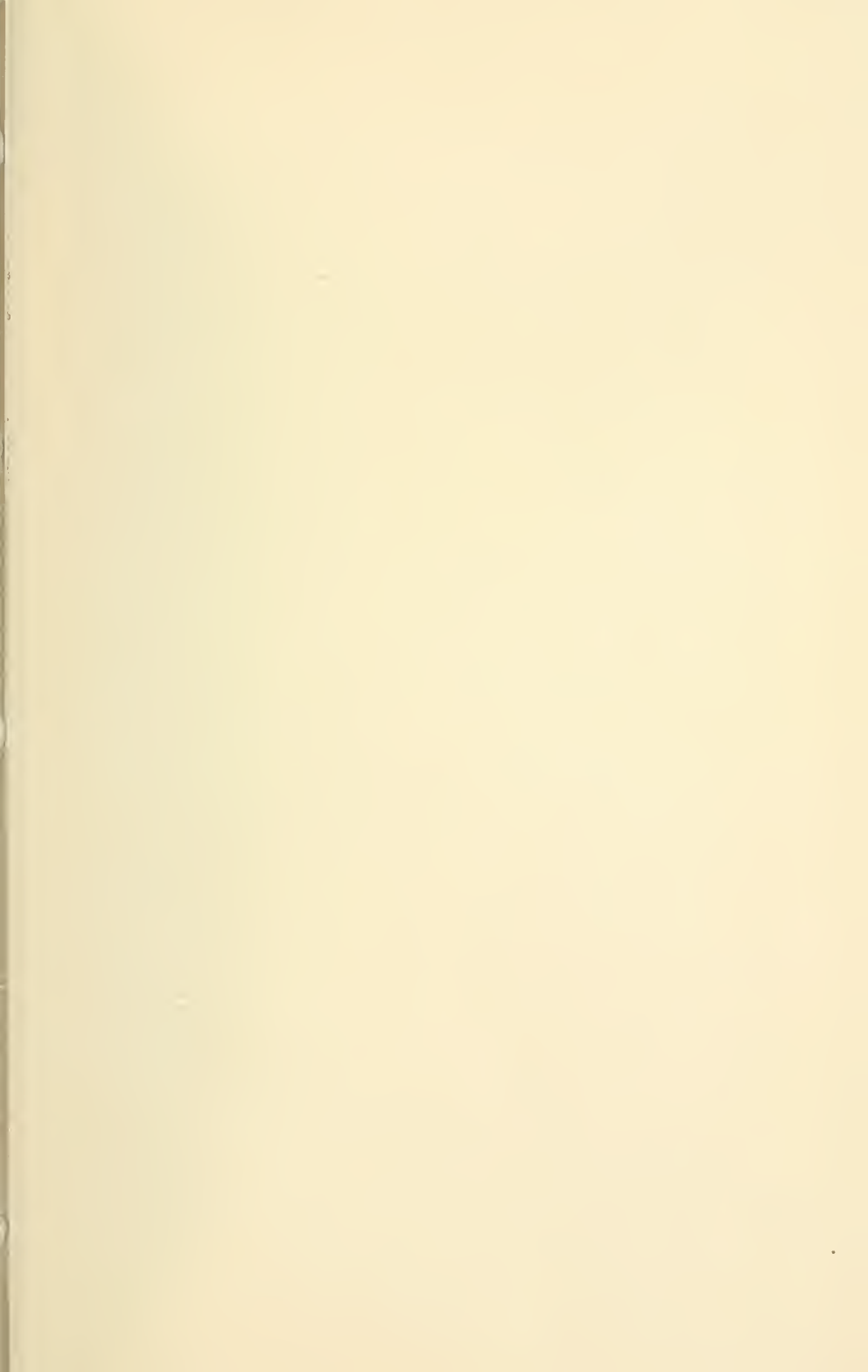
As the Greeks and Romans looked upon other nations as barbarians, and their languages as barbarous, they did not care to pronounce a sound they must have had but few opportunities to hear; and being unable to pronounce it without practice, the Hebrew *shin* naturally became S. The moderns, however, who both write Latin and pronounce English *sh*, have a difficulty in representing Latinized geographical and personal names; and wishing to preserve the sound in question, they do not like to convert it into S, but fall into the greater error of fancying that the sound may be represented, and in Latin, by English *sh*, French *ch*, or German *sch*, which, however, can have no such power in Latin, where *sh* must have the same power as in *mishap*, *ch* that of Greek χ, and *sch* that of Greek σχ, or σ followed by χ,—a result perfectly barbarous. In giving several geographical names to insects, I have used the old long S of European typography, which had already been used in printing Latin.

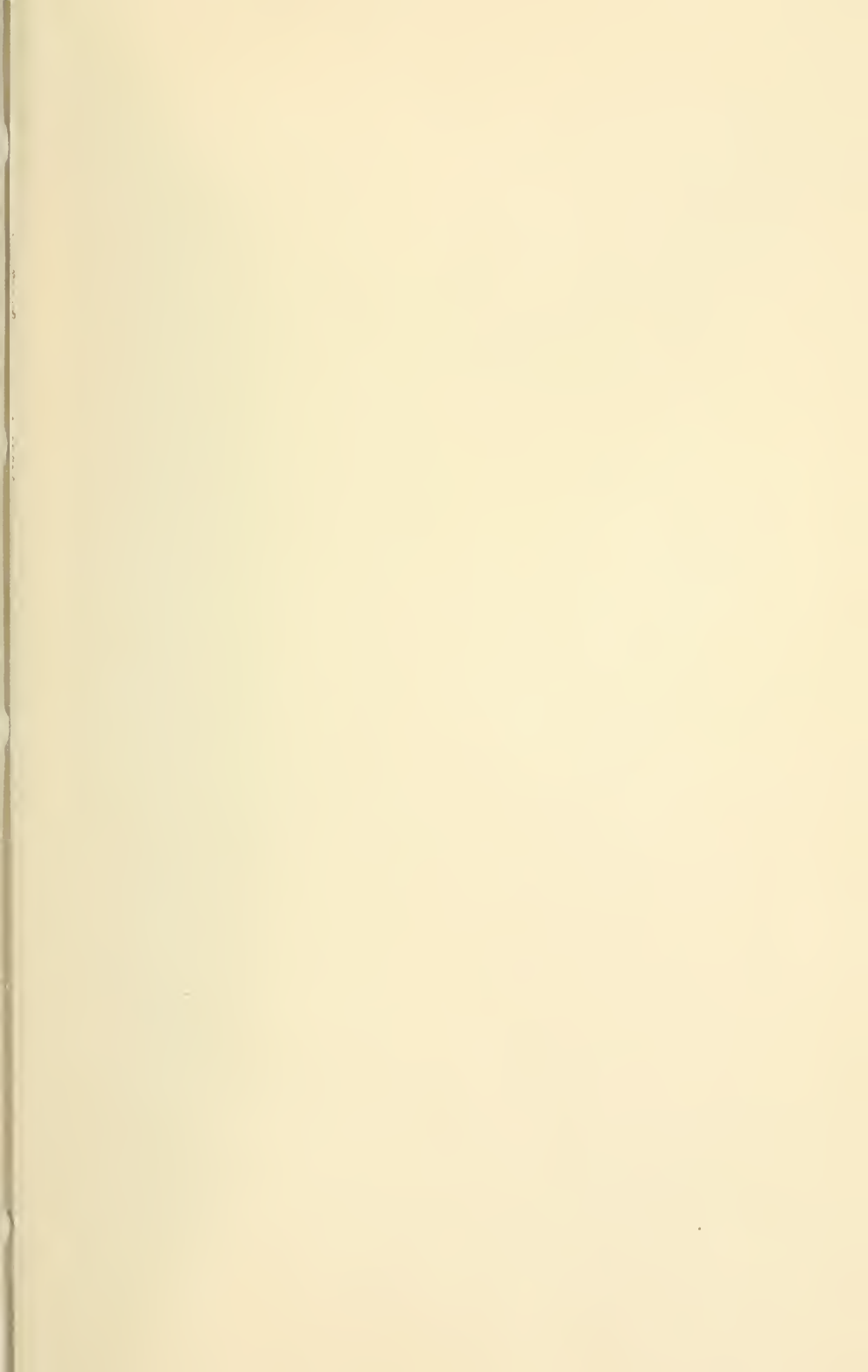


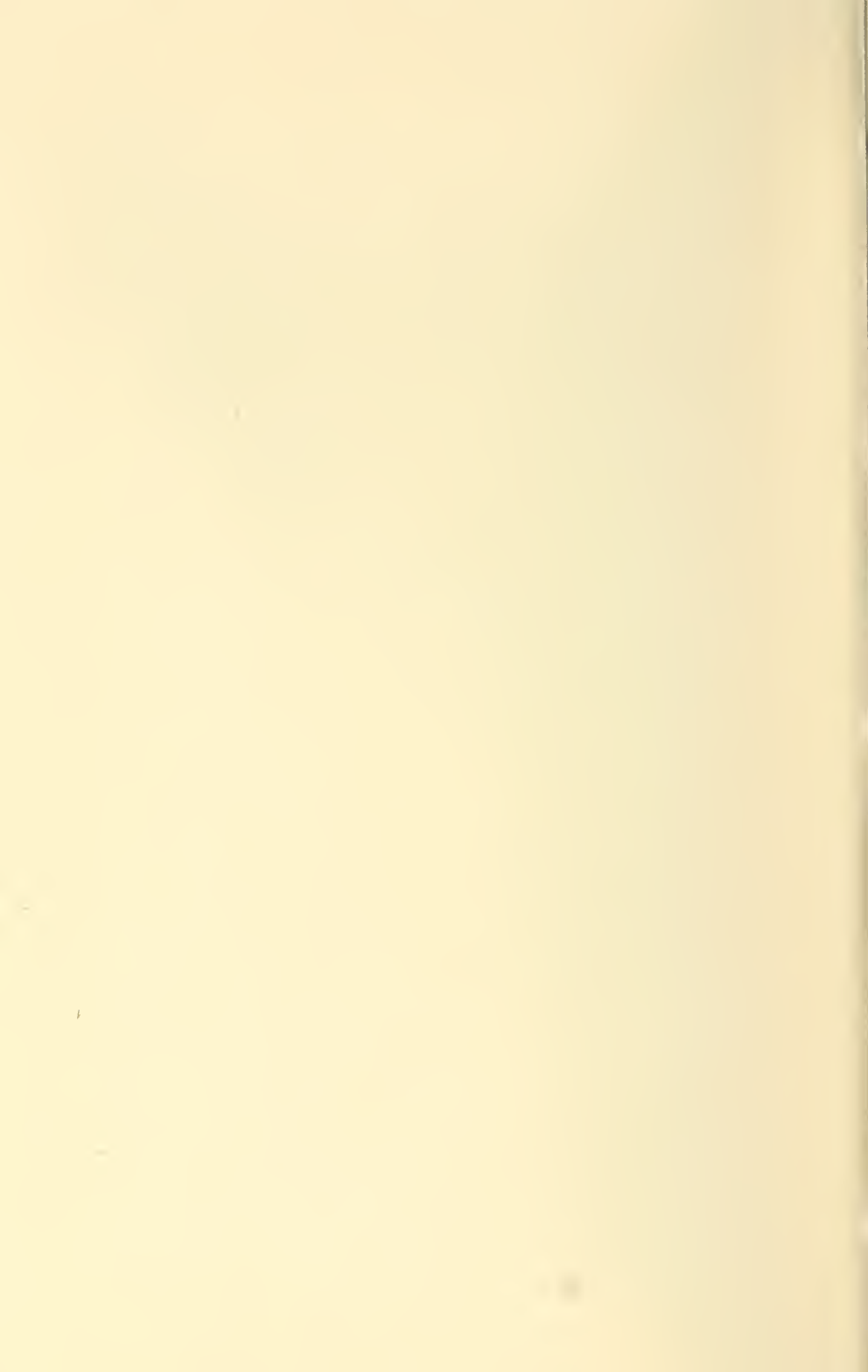


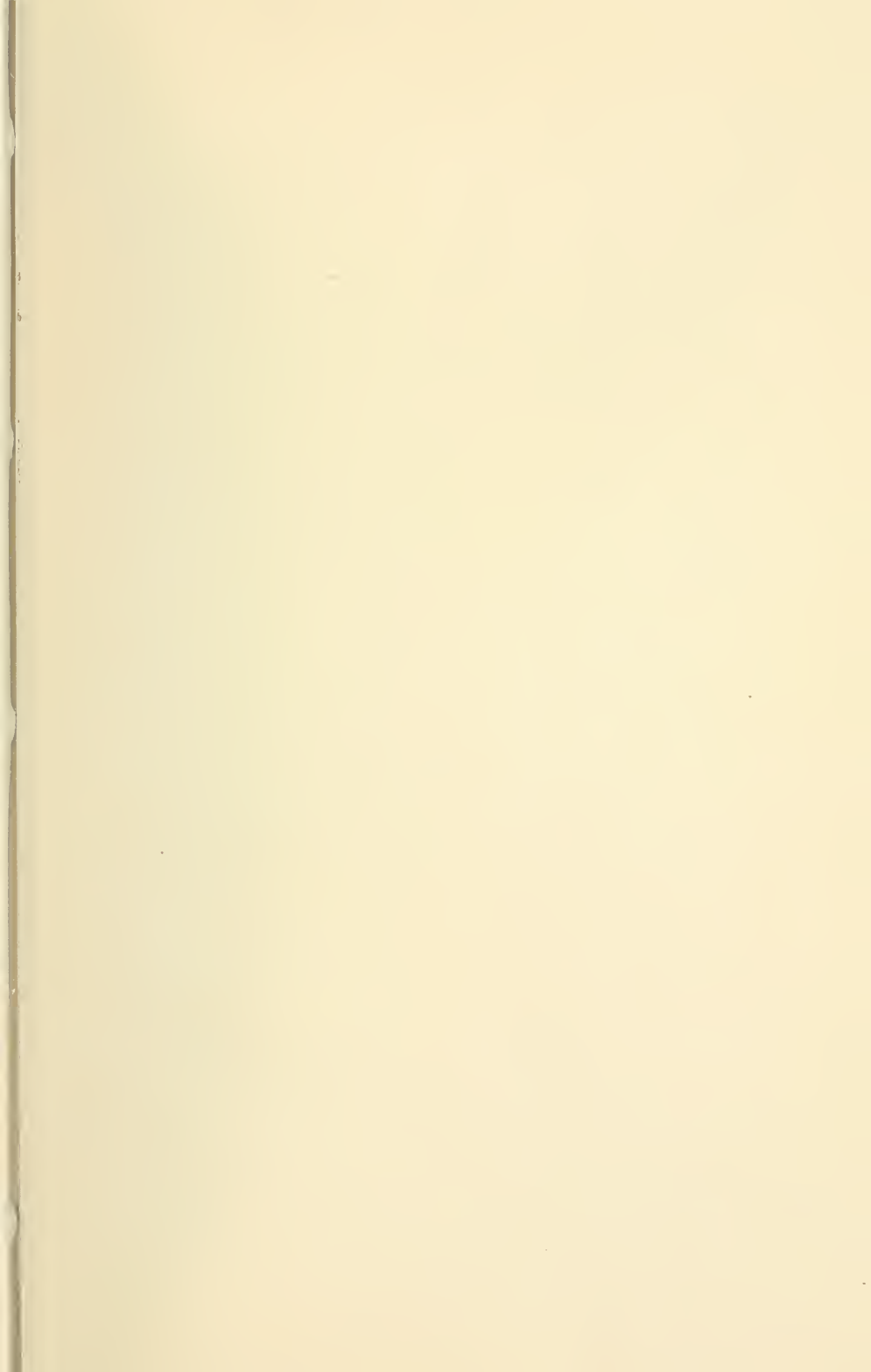




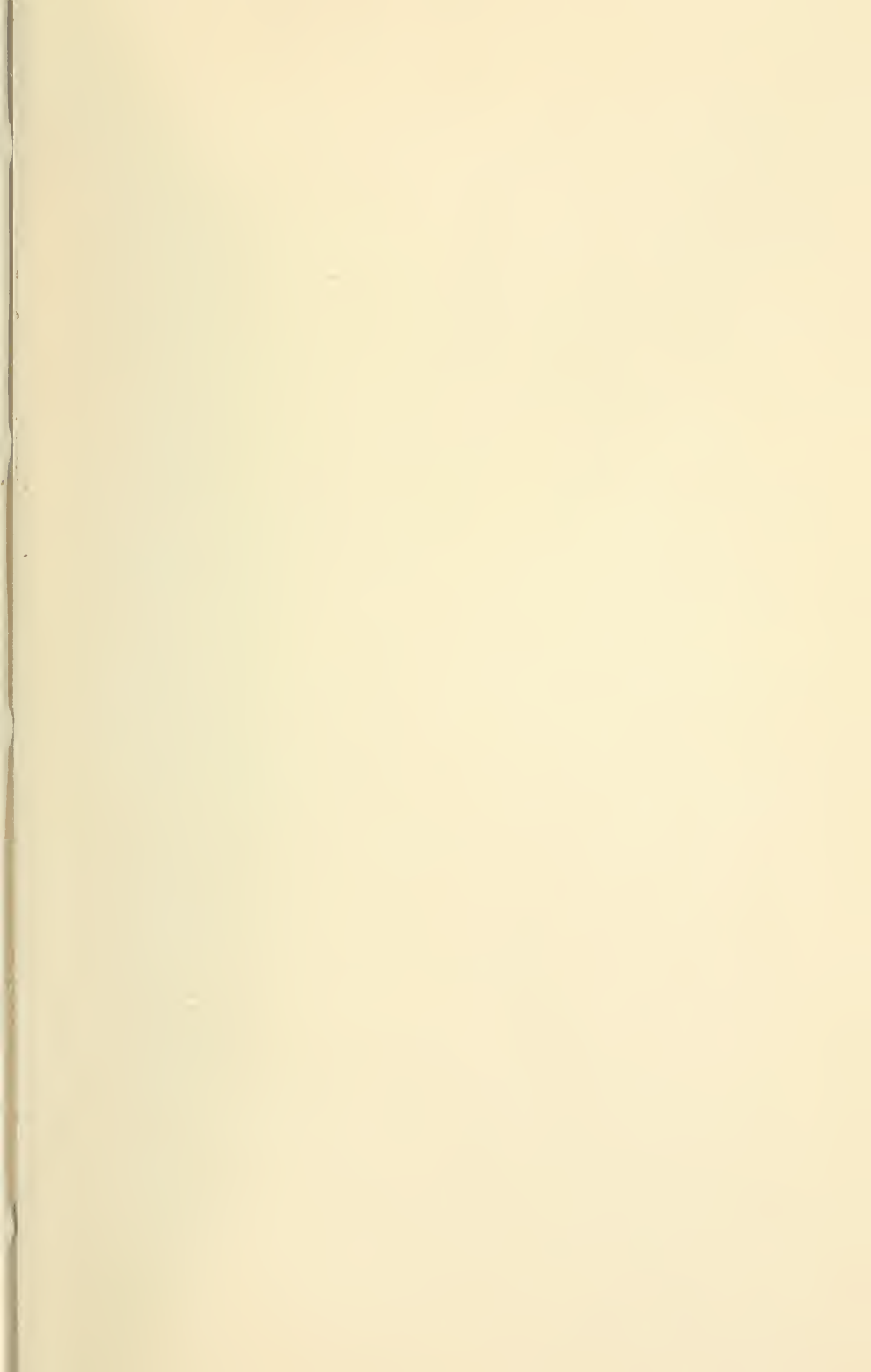


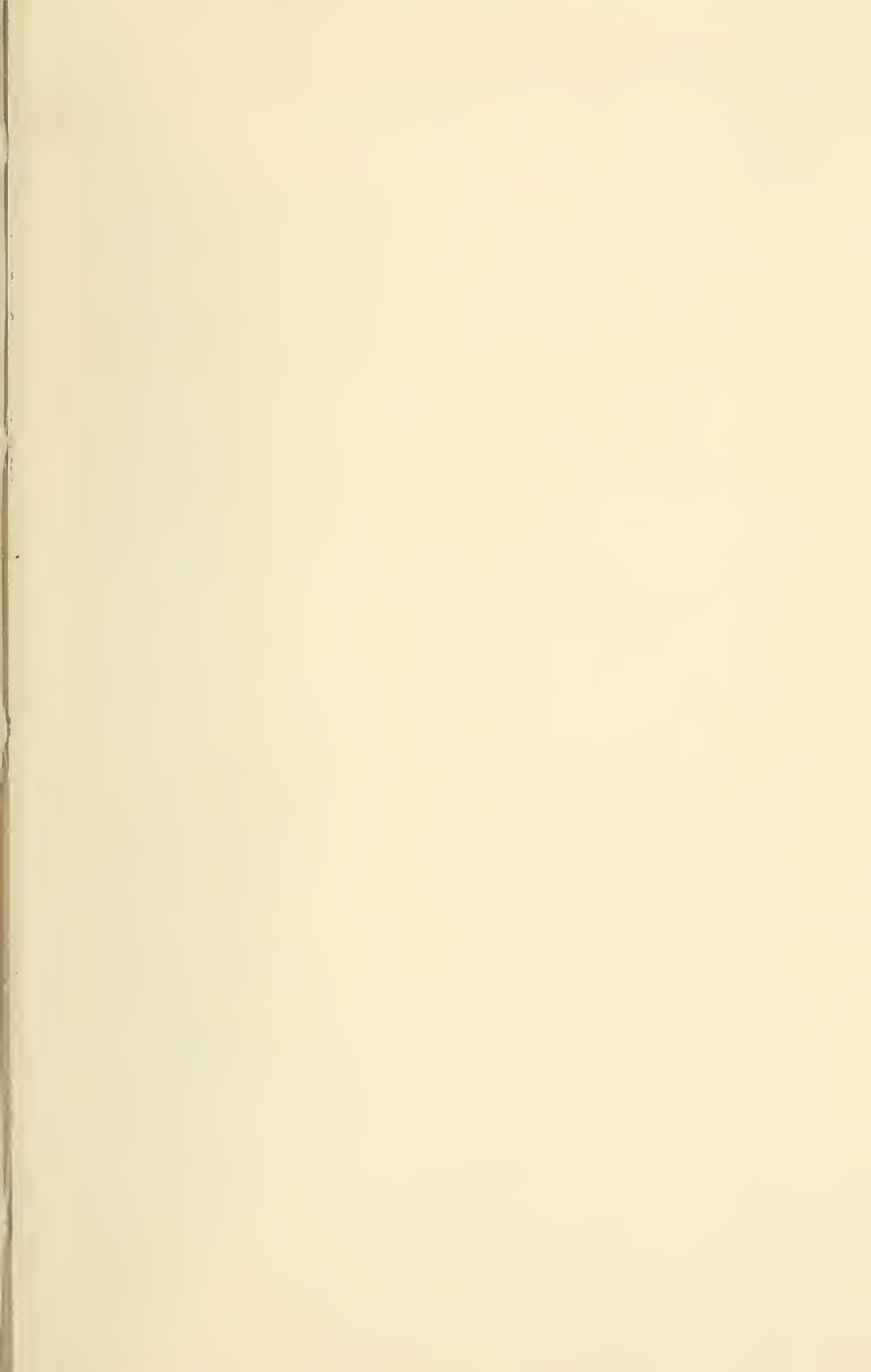












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